Claims

1. A linear chemical mechanical planarization (CMP) belt pad, comprising:

a first portion comprised of a first pad material, the first portion having a first end and a second end; and

a second portion comprised of a second pad material, the second portion being situated between the first and second ends of the first portion and extending substantially across a width of the belt pad.

2. The linear CMP belt pad of claim 1, wherein the first portion of the belt pad is configured for barrier removal.

3. The linear CMP belt pad of claim 1, wherein the first pad material is comprised of polyurethane.

4. The linear CMP belt pad of claim 1, wherein the second portion of the belt pad is configured for buffing.

5. The linear CMP belt pad of claim 1, wherein the second pad material is comprised of porous rubber.

6. A method for planarizing a wafer in a single linear chemical mechanical planarization (CMP) module, comprising:

conducting a first planarization operation in the single linear CMP module by contacting a surface of the wafer with a surface of a rotating belt pad;

stopping the rotation of the belt pad; and

while the rotation of the belt pad is stopped, conducting a second planarization operation in the single linear CMP module by contacting the surface of the wafer with the surface of the belt pad.

7. The method of claim 6, wherein the first planarization operation is configured for barrier removal.

8. The method of claim 6, wherein the second planarization operation is configured for buffing.

9. The method of claim 6, wherein the belt pad includes a first portion comprised of a first pad material and a second portion comprised of a second pad material and wherein the second planarization operation includes:

contacting the wafer with the second portion of the belt pad.

10. The method of claim 9, wherein the second planarization operation includes:

creating relative motion between the surface of the wafer and the surface of the belt pad.

11. The method of claim 10, wherein the relative motion is created by moving the wafer in a back and forth motion.

12. The method of claim 10, wherein the relative motion is created by moving the belt pad in a back and forth motion.

13. A linear chemical mechanical planarization (CMP) system, comprising:

a pair of rollers;

a belt pad disposed on the rollers, the belt pad having a first portion comprised of a first pad material and a second portion comprised of a second pad material;

a wafer carrier disposed above a surface of the belt pad; and

a control system for controlling a rotation of the rollers, the control system being configured to stop rotation of the rollers such that the second portion of the belt pad is aligned under the wafer carrier.

14. The CMP system of claim 13, wherein the first portion of the belt pad is configured for barrier removal.

15. The CMP system of claim 13, wherein the first pad material is comprised of polyurethane.

16. The CMP system of claim 13, wherein the second portion of the belt pad is configured for buffing.

17. The CMP system of claim 13, wherein the second pad material is comprised of porous rubber.

18. The CMP system of claim 13, wherein the belt pad has a reference notch and the control system is configured to determine a location of the second portion relative to the wafer carrier by using the reference notch.

19. A linear chemical mechanical planarization (CMP) belt pad, comprising:

a first portion comprised of a first pad material; and

a second portion comprised of a second pad material embedded in the first portion, the second portion being embedded in the first portion such that a peripheral surface of the second portion is surrounded by a surface of the first portion.